Dry areas = water scarcity, limited and vulnerable natural resources, climatic variability, and a diverse and complex mix of pastoral, agro-pastoral, mixed rainfed and irrigated production systems requiring an integrated agro-ecosystems approach to research for development.
Global partners in the design & development of CRP1.1 (8+ Stakeholder Workshops)

**International centers**
- ICARDA
- Bioversity
- FAO
- ILRI
- WorldFish
- ICRISAT
- CIAT
- ICBA
- IWMI
- AVRDC
- CIP
- ICRAF
- Sub-Saharan Africa CP

**International and regional fora**
- AARINENA
- CACAARI
- FORAGRO
- ASARECA
- CORAF/WECARD
- GFAR
- APAARI
- FARA

**National research organizations**
- Afghanistan: MAIL
- Bangladesh: BARI
- Brazil: EMBRAPA
- Burkina Faso: INERA
- China: CAAS
- Egypt: ARC
- Ethiopia: EIAR, Arba Minch University
- France: CIRAD
- Ghana: ARI, CSIR
- India: ICAR, CRIDA, CAZRI, FES, NRAA, Watershed Organization Trust
- Iran: AREEO
- Jordan: NCARE
- Kazakhstan: South-Western Scientific Production Center of Agriculture
- Kenya: KARI
- Mali: INSAH/CILSS
- Morocco: INRA
- Niger: INRAN
- Nigeria: ARC
- Pakistan: BARI, CSO, PARC, SSD
- South Africa: CSIR, Univ. of Ft Hare, WRC
- Sudan: ARC
- Syria: GCSAR, Agha Khan Foundation
- Tajikistan: TAAS
- Tunisia: IRA
- Turkmenistan: National Farmers’ Association, NAS
- Turkey: AARI
- USA: USDA
- Uzbekistan: Kashkadarya Research Institute
- Zambia: University of Zambia
Learning, growing, spiral impact pathway

1. Traditional research-for-development impact pathway includes four steps: research, outputs, outcomes and impact.

2. CRP1.1 views these steps not as a linear sequence, but as an upward spiral of learning and growing.

3. This results in an iterative research cycle, with continuous improvement in technologies.
### “Following the Impact pathway backwards” (in proposal)

<table>
<thead>
<tr>
<th>CRP Objective / Operational level</th>
<th>Information needed</th>
<th>Performance targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GOAL / IMPACT</strong></td>
<td>Characterization of Action Sites in terms of the System Level Outcomes (SLO)</td>
<td>Performance Targets</td>
</tr>
<tr>
<td></td>
<td>System Level Outcomes:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- <em>Reduce rural poverty</em>: Number of poor and spatial distribution .... other indicators?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- <em>Increase food security</em>: Food Insecurity Index ..... other indicators?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- <em>Improve nutrition and health</em>: Number of undernourished children ... other indicators?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- <em>Ensure more sustainable management of natural resources</em>: soil, water, agrobiodiversity, grasslands......other indicators?</td>
<td></td>
</tr>
<tr>
<td><strong>OUTCOMES</strong></td>
<td>Defining Hypotheses / Research Questions, by Action Site in each Target Region</td>
<td>Partners / Indicators</td>
</tr>
<tr>
<td></td>
<td><em>Examples:</em></td>
<td></td>
</tr>
<tr>
<td><strong>OUTPUTS</strong></td>
<td>Defining research deliverables, by Action site, within each Target area</td>
<td>Partners/ Indicators</td>
</tr>
<tr>
<td></td>
<td><em>Examples:</em></td>
<td></td>
</tr>
<tr>
<td><strong>ACTIVITIES</strong></td>
<td>Defining research activities, at each Action Site</td>
<td>Milestones</td>
</tr>
<tr>
<td></td>
<td><em>Examples:</em></td>
<td></td>
</tr>
<tr>
<td><strong>RESEARCH AGENDA</strong></td>
<td>Defining research strategy</td>
<td>Methodology</td>
</tr>
<tr>
<td></td>
<td><em>Examples:</em></td>
<td></td>
</tr>
</tbody>
</table>
CRP1.1 Integrated and Sustainable Agricultural Production Systems for Improved Food Security and Livelihoods in Dry Areas

A systems approach for sustainable, profitable dryland agro-ecosystems

1. Much research focuses on individual components of an ecosystem, in isolation, in a reductionist way. This leads to limited impacts on the ground (bottom). = LOW LEVEL OF INTEGRATION

2. Dryland agro-ecosystem’ farmers’ reality involves complex and dynamic relationships between multiple components: soil, water, crops, vegetables, livestock, trees, fish … and people. = HIGH LEVEL OF INTEGRATION

3. Researchers should join farmers, livestock keepers, foresters, and fishers, focusing on integrated systems. Then understanding increases, research becomes demand-driven, and outputs are aligned to user’s needs.
CRP1.1 / Dryland Systems focuses on two agro-ecosystems

1. Reducing vulnerability
2. Sustainable intensification

Circles/ovals indicate the 5 Target Regions.
Distinction between focus on reduced vulnerability and risk and focus on sustainable intensification: there are transition zones.
Overview of CRP1.1 Strategic Research Themes (SRTs) and their outputs

SRT1: Approaches and models for strengthening innovation systems, building stakeholder innovation capacity, and linking knowledge to policy action

SRT2: Reducing vulnerability and managing risk

SRT3: Sustainable intensification for more productive, profitable and diversified dryland agriculture with well-established linkages to markets

SRT4: Measuring impacts and cross-regional synthesis
What’s New?

- Integrated approach at landscape, system and community levels
- Scale: global, integrating regional programs of CG Centers and other CRPs & partners
- Within 5 Target Regions: Target Areas with Action Sites (1) and Satellite Sites (1-2)
- Research on effective partnership strategies, linking research-to-development
**Partnerships**

**Principle:** CRP1.1 will use flexible, inclusive partnership arrangements to provide the expertise needed at each stage of the impact pathway.

**Partners:**
- 9 CG Centers (ICARDA, ICRISAT, Bioversity, CIAT, CIP, ICRAF, ILRI, IWMI, WorldFish)
- Sub-Saharan Africa Challenge Program
- National agricultural research institutions & regional fora
- Extension services
- Community organizations and rural institutions (e.g. Farmers Associations, Water Users Associations)
- Advanced research institutes in the North and the South
- Private sector
- NGOs, CSOs
- Development agencies
Partnerships and relations with other CRPs

Alignment with national agendas

1. Links to **national development strategies** through national policy & decision-makers

2. **Monitoring and evaluation process:** measurable indicators and milestones, in accordance with Governments’ goals

Collaboration with other CRPs:

1. **CRP1.1 will utilize outputs from other CRPs** within its Target Regions, and will benefit from information, knowledge and tools developed by other CRPs

2. **CRP1.1 will provide other CRPs with feedback** on their outputs’ performance in integrated agro-ecosystems
Governance and management

Organization of CRP1.1

Consortium Board

Performance Contract

CRP Lead Center: ICARDA

Steering Committee

Research Management Committee

Independent Science Advisers

Regional Stakeholder Advisory Committees

Coordinator Region 1
Team 1 CG Centers ARIs NARS

Coordinator Region 2
Team 2 CG Centers ARIs NARS

Coordinator Region 3
Team 3 CG Centers ARIs NARS

Coordinator Region x
Team x CG Centers ARIs NARS

Lead Center: ICARDA

Steering Committee: CGIAR Center DGs; CRP Leader, NARS leaders, ARI leaders, development partners

Research Management Committee: CRP Leader (chair), Regional and Learning Site Coordinators

Interdisciplinary Research Teams

Leadership & Execution
Criteria for choice of Target Areas & applied to proposed Action Sites

Characteristics of potential action sites in Target Area (maximum 3/country)

<table>
<thead>
<tr>
<th>Target Area</th>
<th>Potential Action Site 1</th>
<th>Potential Satellite Site 1</th>
<th>Potential Satellite Site 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Potential for hypothesis testing</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Representativeness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential for out-scaling (impact)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to attract funds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to interact with CRPs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Criteria for dryland Action Site characterization (non-exhaustive list)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Limits for SRT 2</th>
<th>Limits for SRT 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of growing period</td>
<td>&lt;90 days</td>
<td>90-180 days</td>
</tr>
<tr>
<td>Distribution of poverty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunger and malnutrition (food security, no of people, % of people)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aridity Index</td>
<td>0.03 to 0.35</td>
<td>0.35-0.65</td>
</tr>
<tr>
<td>Environmental risk (Rainfall variability, access to irrigation,)</td>
<td>CV&gt;15%</td>
<td>CV&lt;15%</td>
</tr>
<tr>
<td>Land degradation(soil salinity, soil erosion)</td>
<td>High</td>
<td>Low-medium</td>
</tr>
<tr>
<td>Market access</td>
<td>Travel time &gt;2 hrs</td>
<td>Travel time &lt;2 hrs</td>
</tr>
<tr>
<td>Population density</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

During ground-work list was greatly expanded and detailed.
Target Areas and Action Sites: West Africa and Dry Savannas

CRP1.1 - Continental West African Sahel and Dry Savannas:
- Extent of SRT2 (reducing vulnerability) and SRT3 (sustainable intensification) domains

20.7% of regional SRT area
43.4% of country area

Action Sites / Benchmark Areas:
- A. KKM: Kano-Katsina-Maradi
- B. WBS: Wa-Bobo Dioulasso-Sikassc

Satellite Sites:
- 1. CMN: Cizana-Markala-Niono
- 2. GYO: Gouirs-Yaku-Ouahigouya
- 3. FAK: Fakara
- 4. BDF: Bandafassi
- 5. DTK: Damango-Tolon-Kumbungu
- 6. BTM: Bawku-Tone-Materi
- 7. DAH: Dahra

Aridity Index
SRT2 - [0.03,0.35]
SRT3 - [0.35,0.65]
Surface waters
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 May</td>
<td>Submission of Concept Note to Consortium Board</td>
<td>Virtual</td>
</tr>
<tr>
<td>23 June</td>
<td>Receipt of Consortium Board’s comments on Concept Note</td>
<td>Virtual</td>
</tr>
<tr>
<td>6–7 July</td>
<td>Planning Workshop with CGIAR Centers</td>
<td>Nairobi</td>
</tr>
<tr>
<td>8–9 July</td>
<td>Stakeholders’ Workshop with CGIAR Centers and main NARS partners</td>
<td>Nairobi</td>
</tr>
<tr>
<td>11–25 July</td>
<td>Drafting full proposal by respective SRT writing coordinators, and output writing focal points; update other sections in full proposal—incorporating comments from Consortium Board, external reviewers, and inputs from Nairobi meetings</td>
<td>Aleppo, Virtual</td>
</tr>
<tr>
<td>26–31 July</td>
<td>Collating, finalizing writing and editing 1st draft full proposal</td>
<td>Virtual</td>
</tr>
<tr>
<td>2 Aug</td>
<td>1st draft sent by ICARDA for perusal by all (CGIAR and non-CGIAR) partners and key stakeholders</td>
<td>Virtual</td>
</tr>
<tr>
<td>8 Aug</td>
<td>CGIAR pre Stakeholders’ Consultative Conference meeting</td>
<td>Aleppo</td>
</tr>
<tr>
<td>9–10 Aug</td>
<td>Stakeholders’ Consultative Conference</td>
<td>Aleppo</td>
</tr>
<tr>
<td>11–14 Aug</td>
<td>Finalize drafting full proposal development incorporating inputs from Stakeholders’ Consultative Conference by writing team</td>
<td>Aleppo</td>
</tr>
<tr>
<td>15 Aug</td>
<td>Posting at Lead Center’s web site of 2nd draft for e-consultation with broad range of partners and stakeholders</td>
<td>Aleppo</td>
</tr>
<tr>
<td>16–23 Aug</td>
<td>E-consultation with stakeholders</td>
<td>Virtual</td>
</tr>
<tr>
<td>24 Aug</td>
<td>Summarize e-consultation inputs</td>
<td>Virtual</td>
</tr>
<tr>
<td>25–28 Aug</td>
<td>Update full proposal with e-consultation inputs</td>
<td>Virtual</td>
</tr>
<tr>
<td>29–31 Aug</td>
<td>Artwork and last edits to full proposal (3rd draft)</td>
<td>Aleppo/Virtual</td>
</tr>
<tr>
<td>1 Sep</td>
<td>Lead Center on behalf of all partners, submits CRP1.1 proposal (final draft) to Consortium Board through interim Consortium Office</td>
<td>Aleppo</td>
</tr>
<tr>
<td>11–14 Feb</td>
<td>Core writing team meeting and e-follow up to address Consortium Board guidelines</td>
<td>Dubai/Virtual</td>
</tr>
<tr>
<td>11–13 May</td>
<td>Core writing team meeting and e-follow up to address CGIAR Fund “Must Haves”</td>
<td>Dubai/Virtual</td>
</tr>
<tr>
<td>27-30 June</td>
<td>Dryland Systems Regional Design Working Meeting to further characterize and select Benchmark Areas, Action and Satellite Sites, elaborate on hypothesis testing, identify initial partners and priority undertakings in each of the five Target Regions, and fine-tune Knowledge Sharing Centers</td>
<td>Nairobi</td>
</tr>
</tbody>
</table>
Steps and Timeframe: The phasing of the process

1. February – April 2012: three months of groundwork by all involved, in direct contact with NARS and other representatives in the Target Regions.

2. May – June 2012: RIWs within each of the five Target Regions. Workshops with ICARDA, consultants, member CGIAR Centers, NARS, advanced research centers, GFAR Regional Fora, development agencies, farmers and water users associations, NGOs, processing representatives, market and policy specialists, policy-makers, private enterprise, and other partners and stakeholders.

3. July-August 2012: synthesis of five RIWs’ outcomes and develop draft Inception Phase Report

4. September 2012: Synthesis Workshop to endorse the draft Inception Phase Report with CG partners, consultants, NARS and selected stakeholders.

5. September 2012: finalization of synthesis, and submission of CRP1.1 Inception Phase Report to CGIAR Fund Council.
Next Steps

Ground-work & in each of five Target Regions

1. Site characterization
2. Research hypotheses and major research questions
3. Activities and outputs
4. Measurable indicators
5. Monitoring & Evaluation
6. Partners
7. Impact pathway
8. Logframe

Inception Workshops in each of five Target Regions of senior partners

1. Validation
2. Consensus
3. Buy-in
4. Sign-off
CRP1.1: Integrated and Sustainable Agricultural Production Systems for Improved Food Security and Livelihoods in Dry Areas (Dryland Systems)